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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/883,340

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Michael R. Smith

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06/06/2006

BANNER & WITCOFF

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EXAMINER

RUHL, DENNIS WILLIAM

ART UNIT

PAPER NUMBER

3629

DATE MAILED: 06/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/883,340

Applicant(s)

SMITH ET AL.

Examiner

Dennis Ruhl

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Applicant's response of 3/21/06 has been entered.

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 15-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For claim 15, there is no antecedent basis for "the memory". What memory does this refer to? None has previously been claimed. The examiner does not know what memory this is referring to so the claim is indefinite. For part iii), with respect to "the critical thresholds", where has it been previously claimed that there are critical thresholds (more than one)? It was claimed that there is critical threshold *information* but not more than one critical threshold (thresholds is plural). There is no antecedent basis for this term and it is not clear as to how many thresholds the claim requires.

For claims 23,24, what is meant by reciting that the business decision comprises a flight operation or a utility operation? How is a flight operation a decision? How is a utility operation a decision? The language of this claim makes no sense. Isn't the business decision something like a decision of whether or not to reroute airplanes or a decision of whether or not to call in more workers when a storm is forecast? The business process decision has to be a decision to either do something or not do something, but cannot be what is claimed. These claims are indefinite.

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3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over the article "Space Shuttle Weather Launch Commit Criteria and KSC End of Mission Weather Landing Criteria".

For claims 1,2,5-7,9,11,12,15,16,19-21,23,25,26,29,30,33-35,37,39,40,43,46,47, the Space Shuttle article discloses that the business process decision of whether or not to launch the Space Shuttle (is an airplane as well as a spacecraft) takes into account many types of meteorological data (weather variables). Weather data is automatically received from the USAF, NOAA, as well as from weather instruments located at the launch site. All of these are providers of weather data. Critical threshold information has been generated that relates the business decision of whether or not to launch the

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Space Shuttle to weather variables in the received weather data. The critical threshold information is information such as whether or not the 24-hour average temperature has been below 41 degrees (related to external tank propellant loading), wind speeds (critical wind speed), precipitation, lightning data, as well as many others. The article states that if certain weather variables are not within the allowable critical thresholds, the shuttle will not launch. These are rules as claimed. The determination of whether or not one of the critical thresholds is presently exceeded or is likely to be exceeded is present in the article. Numerous weather variables are tracked and analyzed to determine whether or not the shuttle can launch. The sending of event information to the data processing system (the business process decision module, cl. 43) is interpreted to be the receipt of data by the MIDDS disclosed on page 8. The MIDDS system integrates all of the weather data on one display. Not disclosed is that the critical threshold information is stored in memory (assumed to be computer memory) as one or more rules and that event information is sent to the data processing system to alter the business decision in the data processing system. While the article does not explicitly state that a data processing system is involved in the monitoring of the weather and in the determination of whether or not critical thresholds are presently exceeded or will likely be exceeded, the examiner notes that the article does disclose the use of weather instruments, the use of terminal displays to monitor weather conditions, and the use of a mathematical recovery formula to determine if a return to acceptable parameters has been achieved so that the launch can go forward. Page 2 discloses, "a mathematical recovery formula of the environmental conditions is used to

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determine if a return to acceptable parameters has been achieved. Launch conditions have been reached if the formula reaches a positive value.”. This would lead one of ordinary skill in the art in the direction of using a data processing system to automate the decision process. Viewing the disclosure in totality, and taking into account that one of ordinary skill in the art recognizes that the shuttle program is highly computerized, one of ordinary skill in the art would have been motivated to use the data processing system to monitor the weather data and to make comparisons of the weather data to critical thresholds stored in memory, to determine whether or not the launch should go forward. The article lists many weather variables, some of which cannot be monitored without the use of technology (i.e. upper atmosphere wind profiles, the one-minute average of the electric field mill network). One of ordinary skill in the art would be motivated to store the critical thresholds in the memory of the data processing system and use the system to analyze the weather data to determine whether or not any thresholds have been exceeded. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the weather data analyzed by the data processing system and to compare the data to the critical thresholds so that it is much easier and more efficient to process all of the weather data and arrive at a decision. One of ordinary skill in the art would clearly be motivated to have the weather analysis done by a data processing system so that the system can “run the numbers” and provide an indication of whether or not thresholds have been, and to alert mission control of the fact that the shuttle cannot launch due to a critical threshold being exceeded.

For claim 43, in addition to that set forth in the preceding paragraph, with respect to the claimed transmitting a request for meteorological data to a weather information provider and automatically receiving the weather information, the examiner considers it inherent that with the use of the disclosed weather instruments (weather information providers) at the shuttle launch site, a request for data is sent to the instruments by the processor of the automated system. The instruments used at the launch site to monitor/record the weather are electronically tied into the MIDDs, so it is considered inherent that a request must necessarily be sent to these instruments to instruct them to send weather data. Once the request is sent the data is automatically received in response to the request.

For claims 3,4,17,18,31,32,44,45, the article does not specifically disclose the use of both meteorological and climatological data in the forecast. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use both meteorological and climatological data in the forecast. This claim is reciting the use of current weather data and past weather data in formulating the forecast. To make a forecast you must take into account recent weather data (is pressure dropping based on some past measurements?) with current data (what is the current pressure), to determine what the pressure will be in the near future. Weather forecasting as is well known in the art is not limited to just using meteorological data but also takes into account past historical data (which includes weather data for the most recent hour). Any weather data that is in the past, even 1 minute old, is historical data (climatological). It would have been obvious to one of ordinary skill in the art at the time

the invention was made to use both meteorological and climatological data in the forecast.

For claims 8,22,36, the claim is satisfied by the fact that when a new shuttle launch date is set, NOAA and the USAF are notified so that they can provide weather data. This is a request for meteorological information.

For claims 10,24,38, due to the 112 problem and due to the breadth of the claim language "electric utility operation", the examiner considers that the article satisfies what is claimed. This is because when launching the shuttle there it is inherent that inherently is involved. The shuttle cannot launch without electricity. The language "electric utility operation" is broad enough to read on supplying electricity to the shuttle or providing electricity to mission control.

For claims 13,27,41,48, not disclosed is that the system will determine how long a threshold will be exceeded and the sending of delay information. It would have been obvious to one of ordinary skill in the art to have a determination made as to how long a critical threshold is expected to be exceeded so that you can forecast what the launch conditions will be at a later time. In the event that a thunderstorm with lightning is too close to the launch area to be able to launch, one of ordinary skill in the art would have been motivated to look into how long the storm will be around (or at least in the launch zone) to see if you can expect to launch at a later time. The delay information would then be the estimate of how long the critical threshold was expected to be exceeded (i.e. when is the storm moving away far enough to launch).

For claims 14,28,42,49, not disclosed is that meteorological data is stored in a database and that some data is requested from the database as claimed. It is old and well known in the art of weather forecasting that weather data is stored and used to assist in the generation of future weather forecasts. That is how the modeling programs for weather have been created, they are based on historical data. It would have been obvious to one of ordinary skill in the art at the time the invention was made to store meteorological data in a database and to query the database for this historical data when generating a weather forecast relating to the launching of the shuttle.

6. Applicant's arguments with respect to claims 1-49 have been considered but are moot in view of the new ground(s) of rejection.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Ruhl whose telephone number is 571-272-6808. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Weiss can be reached on 571-272-6812. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



DENNIS RUHL
PRIMARY EXAMINER